

Site Review And Update

CHEMICAL CONTROL CORPORATION

ELIZABETH, UNION COUNTY, NEW JERSEY

CERCLIS NO. NJD000607481

SEPTEMBER 14, 1992

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Public Health Service

Agency for Toxic Substances and Disease Registry

Division of Health Assessment and Consultation

Atlanta, Georgia 30333

Site Review and Update: A Note of Explanation

The purpose of the Site Review and Update is to discuss the current status of a hazardous waste site and to identify future ATSDR activities planned for the site. The SRU is generally reserved to update activities for those sites for which public health assessments have been previously prepared (it is not intended to be an addendum to a public health assessment). The SRU, in conjunction with the ATSDR Site Ranking Scheme, will be used to determine relative priorities for future ATSDR public health actions.

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Prepared by

**Remedial Programs Branch
Division of Health Assessment and Consultation
Agency for Toxic Substances and Disease Registry**

SUMMARY OF BACKGROUND AND HISTORY

The Chemical Control Corporation site (CCS) is a former industrial waste treatment facility at 23 South Front Street, Elizabeth, Union County, New Jersey. The 2.2--acre site is directly adjacent to the Elizabeth River, near its confluence with the Arthur Kill (Figures 1 and 2) (3). Between 1970 and 1979, CCS accepted wastes for disposal or incineration. Those wastes included acids, bases, arsenic and cyanide compounds, flammable solvents, compressed gases, biologic agents, explosive chemicals, radioactive wastes, and pesticides. The site was closed in January 1979, and a cleanup was initiated by the New Jersey Department of Environmental Protection (NJDEP). The cleanup lasted until April 1980, when a fire of unknown origin broke out. After the fire, the remaining wastes were removed and disposed of; the top 3 feet of soil on site was removed and replaced with clean gravel fill; and a groundwater treatment system was established for the treatment of approximately 6 million gallons of contaminated groundwater.

In 1981, CCS was included on the National Priorities List (NPL) of sites to be addressed under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLAS, or Superfund). In 1983, NJDEP and the U.S. Environmental Protection Agency (EPA) initiated clean-up efforts. The site closure remedial investigation and feasibility study (RI/FS) was completed in June 1987, and a record of decision (ROD) was signed in September 1987; it selected *in situ* fixation of contaminated soil as the principal remedial action, followed by sealing a sewer line under the site, berm repairs, and collection and analysis of environmental samples, as required, to ensure effectiveness of the remedy.

In response to a request from EPA, the Agency for Toxic Substances and Disease Registry (ATSDR) issued a health assessment on April 12, 1987, after reviewing the draft site closure RI/FS and visiting the Chemical Control Corporation Site.

Samples of the surface material, subsurface soil, groundwater, and surface water and sediments from the Elizabeth River were obtained by contract during the RI conducted in 1984--86 and analyzed by EPA. Sources of contamination on site consist of residual contaminants remaining after the post--fire cleanup of the site, including 50 overpacked drums of unknown contents. Those drums contain drilling tailings.

The extent of the residual inorganic and organic contamination of the surface material, subsurface soil, groundwater, and surface water and sediment of the Elizabeth River identified on site is explained in the draft RI and repeated in the final RI/FS of June 1987. Analysis of the surface material (new gravel fill) indicates that chemical contaminants are present at low levels

near the surface of the site. Analysis of the subsurface soil obtained during installation of monitoring wells indicates that the subsurface matrix is contaminated with volatile organic compounds (VOCs), phthalate esters, polychlorinated biphenyls (PCBs), and polynuclear aromatic hydrocarbons (PAHs) at depths of approximately 3 to 10 feet. The groundwater is contaminated with inorganic and organic chemicals. Only the VOCs appear consistently and at relatively high concentrations. Groundwater results correspond well with the results of the subsurface soil contamination; the most highly contaminated samples were collected from areas with extensive subsurface soil contamination.

It does not appear that chemicals are being released from the site to the degree that might be expected in view of the subsurface soil contamination (3). Surface water samples obtained from the Elizabeth River were free of chemical contaminants above detectable limits, except for low levels of tetrachloroethene (PCE), pesticides, and PCBs. The pesticides and PCBs were detected upstream and adjacent to the upstream end of the site. Sediment samples (0--6 inches and 0--24 inches) were obtained at six transects along the Elizabeth River during the 1985 sampling round. Those samples demonstrated that the river bottom contains high concentrations of PAHs, phthalate esters, and monocyclic aromatic compounds (benzene, toluene, xylenes, and chlorobenzene). Of those contaminants, the monocyclic aromatic compounds and the PAHs may have originated from the Chemical Control site. However, there is no evidence of substantial contaminant release under existing site conditions (3).

The 1987 health assessment identified direct contact with groundwater, surface water, leachate, and sediment from the Elizabeth River as environmental pathways. Potential exposure pathways for area residents and workers in surrounding areas include 1) ingestion of contaminated water; 2) ingestion of fish, shellfish, crabs, and other marine organisms; and 3) direct contact with sediment. Although site contaminants are in the Elizabeth River, it is uncertain whether other industrial pollution sources up and down the Elizabeth River are also contributing to the area's contamination.

Conclusions of the April 1987 health assessment were as follows:

- Subsurface soil and groundwater are contaminated with inorganic and organic chemicals. VOCs appear consistently throughout the site;
- Groundwater analysis correlates with the analysis of subsurface soil; the most contaminated groundwater

samples collected are from areas with extensive subsurface soil contamination;

- On-site contaminants have migrated off site and have contributed to the contamination of the Elizabeth River; however, other industrial pollution sources in the area probably also contribute significantly to the river sediment and surface water contamination;
- From the documents reviewed and a site visit to Chemical Control Site, a public health threat does not exist; and
- If land use is changed in the future to residential, a potential public health threat may exist.

The 1987 health assessment recommended the following actions:

1. monitoring for possible off-site migration of contaminants through groundwater, subsurface soil, and leachate;
2. monitoring contaminated fish, shellfish, crabs, and other marine organisms in the Elizabeth River; and
3. further characterization of the area if land use changes to residential.

According to a representative of the New Jersey Department of Health (NJDOH), no health outcome data were available (8); however, a review of the site files reveals that the National Institute for Occupational Safety and Health (NIOSH) has conducted two studies of firefighters exposed to site contaminants during the fire in 1980 (5). ATSDR has not received copies of those studies because of ongoing litigation on the part of the firefighters.

Community concerns date back to 1977 and came to a peak in 1980 because of the fire at the Chemical Control site. Residents expressed concerns about the potential health risks and environmental degradation of the site and the nearby Elizabeth River. Closure of the facility and clean-up activity to date (1987) have alleviated much of the community concern. The main concern during the August 1987 public meeting was expressed by a public official who had doubts about the method of remediation (*in situ* soil fixation), including the effectiveness of the procedure.

CURRENT SITE CONDITIONS

On April 24, 1992, ATSDR personnel (Gregory Ulirsch, DHAC; and Arthur Block, Region II Office) and a representative of the NJDOH (James Pasqualo) visited the Chemical Control Corporation Site.

Also present were representatives of the Elizabeth Health Department and EPA.

The site is in a heavily industrialized area, although private residences are within one-quarter mile to the west. Although the Chemical Control Corporation property was the site of a major explosion and chemical fire in 1980, it is now an empty lot of approximately 2 acres covered by crushed stone and secured by a chain link fence. Unauthorized site access is not likely, and no evidence of trespassing was noted. No physical hazards were observed. All structures and debris from the 1980 fire have been removed from the site. The site is presently flat, featureless, and devoid of vegetation; it contains only monitoring well heads and drums of drilling tailings. An automobile salvage yard is immediately south of the site; the Elizabeth River borders the site to the northwest. The Elizabeth River appears to be environmentally stressed; it did not appear to be used for recreation (water sports or fishing) (7).

There were no sensitive populations or recreational or agricultural areas observed near the site (7).

Conclusions in the 1987 health assessment appear to be supported by the RI/FS of June 1987; however, it should be noted that the environmental data used for the RI/FS are from 1984-86.

EPA Involvement

Since the Health Assessment of April 1987, the EPA contractor OH Materials has removed the 200 gas cylinders that were on site. In addition, four rounds of groundwater sampling are in progress; the third round is scheduled for mid--August 1992 and the fourth for the fall of 1993. The design of the treatability study for *in situ* fixation is underway and is expected to be completed by March or April 1993. The EPA representative met with the planning group of the community of Elizabeth, New Jersey, to plan a public meeting early next year (1993) to discuss the closure remediation and the *in situ* soil fixation process before active remediation is initiated (10).

CURRENT ISSUES

The public health concerns presented in the discussion and conclusion section of the 1987 health assessment remain valid.

The responsible parties signed a consent decree in 1990 to complete remediation of the site, which should reduce or eliminate the risk of exposure to site contaminants. The treatability studies for the *in situ* soil fixation are scheduled for a possible completion date of March or April 1993. When implemented, the treatment process will solidify the contaminated

soil. However, environmental data showing current contamination levels in subsurface soil, groundwater, and surface water and sediment from the Elizabeth River are not available.

NIOSH conducted two studies of firefighters exposed to contaminants during the 1980 fire at the Chemical Control site; however, the studies have not been acquired by ATSDR because of ongoing litigation on the part of the firefighters (9).

Past community health concerns are addressed in the Summary section of this document. No community health concerns were identified in the health assessment of 1987. According to the NJDOH representative, there are no community health concerns at the present time (8).

CONCLUSIONS

The conclusions of the 1987 health assessment appear valid. Available information indicates that a public health threat does not exist. However, if the Chemical Control Corporation site or surrounding area is changed to residential, recreational, or commercial land use, there may be a potential public health threat. New environmental data (surface fill, subsurface soil, groundwater, surface water and sediment of the Elizabeth River) are needed to indicate otherwise.

As recommended by ATSDR in its health assessment, EPA has collected sampling data to monitor possible off-site migration of contaminants through groundwater, subsurface soil, and leachate.

When the treatability studies for *in situ* soil fixation are completed, ATSDR may evaluate the procedural design to ensure that remediation will not pose a public health threat to the community.

RECOMMENDATIONS

The recommendations of the 1987 health assessment remain valid. ATSDR recommends a health consultation be prepared using the current EPA environmental data on-site and off-site (surface fill material, subsurface soil, groundwater, leachate, and sediment from the Elizabeth River) to further evaluate the environmental and public health impact of the Chemical Control Corporation site. However, the health consultation is not a priority because site contaminants leaching into the Elizabeth River are not a public health threat.

Upon completion of the treatability studies for the *in situ* soil fixation, ATSDR should review the results and the recommended remediation process before site closure to ensure that site

remediation measures have eliminated potential public health threats. However, that review is not considered an urgent need.

Once they are available, data from the NIOSH studies conducted on firefighters exposed to site contaminants during the 1980 fire at Chemical Control need to be reviewed, verified and included into the site files.

Health Activities Recommendations Panel Stament

The Public Health Review of the site was reviewed by the Health Activities Recommendations Panel on August 25, 1992. The panel's statement follows:

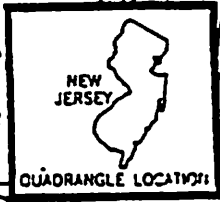
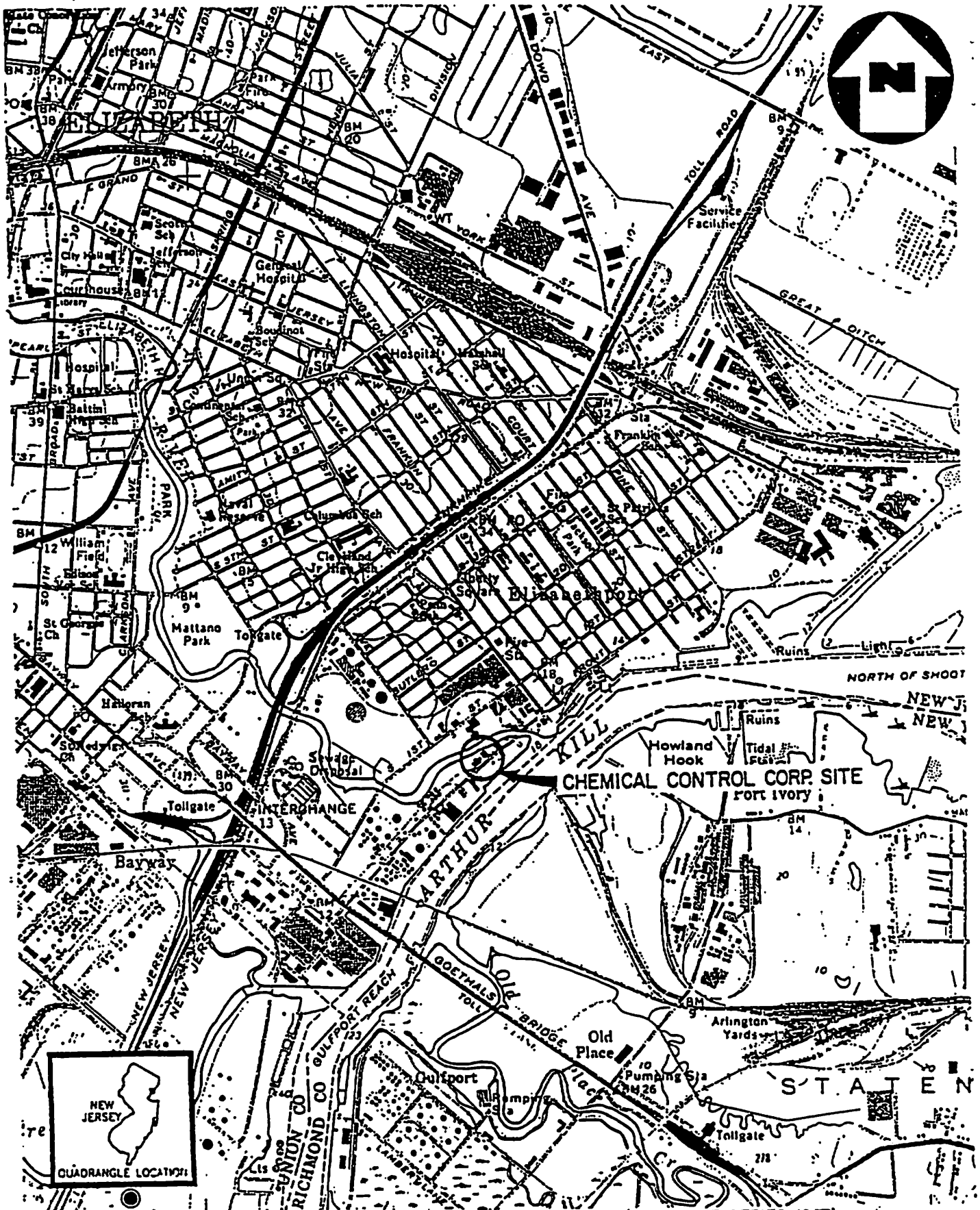
The data and information developed in this site review and update have been evaluated to determine if follow--up actions may be indicated. Further site evaluation is needed to determine public health actions.

DOCUMENTS REVIEWED

Documents reviewed by ATSDR during the development of this summary are as follows:

1. U.S. EPA. July 1986. Closure Remedial Investigation, volumes I and II, Chemical Control Corporation Site, Elizabeth, New Jersey. Contract Number 68-01-6699 prepared by NUS Corporation.
2. ATSDR. April 2, 1987. Health Assessment for Chemical Control Corporation, Elizabeth, New Jersey. CERCLIS Number NJD000607481.
3. EPA. June 1987. Revised Chemical Control Corporation Site Draft Closure Remedial Investigation/Feasibility Study, Elizabeth, New Jersey. EPA Contract Number 68-01-7250 prepared by Ebasco Services Incorporated.
4. U.S. EPA. November 23, 1987. Record of Decision (ROD). Chemical Control Corporation, Elizabeth, Union County, New Jersey.
5. ATSDR. January 31, 1989. Communication from ATSDR Region 2 Representative. NIOSH studies and firefighters issue.
6. U.S. EPA, Region 2. April 1989. Facts Sheet for Chemical Control Corporation Site, Elizabeth, New Jersey.
7. NJDOH, Division OCC/EV. July 22, 1992. NJDOH Representative communication. Site visit narrative of Chemical Control Corporation, Elizabeth, New Jersey.
8. ATSDR. July 27, 1992. Record of Activity. NJDOH representative communication on community concerns of Chemical Control Corporation site.
9. ATSDR. July 30, 1992. Record of Activity. Communication with Medical Officer from the Department of Health, Welfare, and Housing in Elizabeth, New Jersey.
10. ATSDR. August 4, 1992. Record of Activity. Communication with EPA site manager for Chemical Control Corporation, Elizabeth, New Jersey. Current status of Chemical Control site remediation.

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BASE MAP IS A PORTION OF THE U.S.G.S. ELIZABETH, NJ - NY QUADRANGLE (7.5 MINUTE SERIES, 1967)

LOCATION MAP

CHEMICAL CONTROL CORP. SITE, ELIZABETH, NJ

SCALE: 1" = 2000'

FIGURE 1



A Halliburton Company

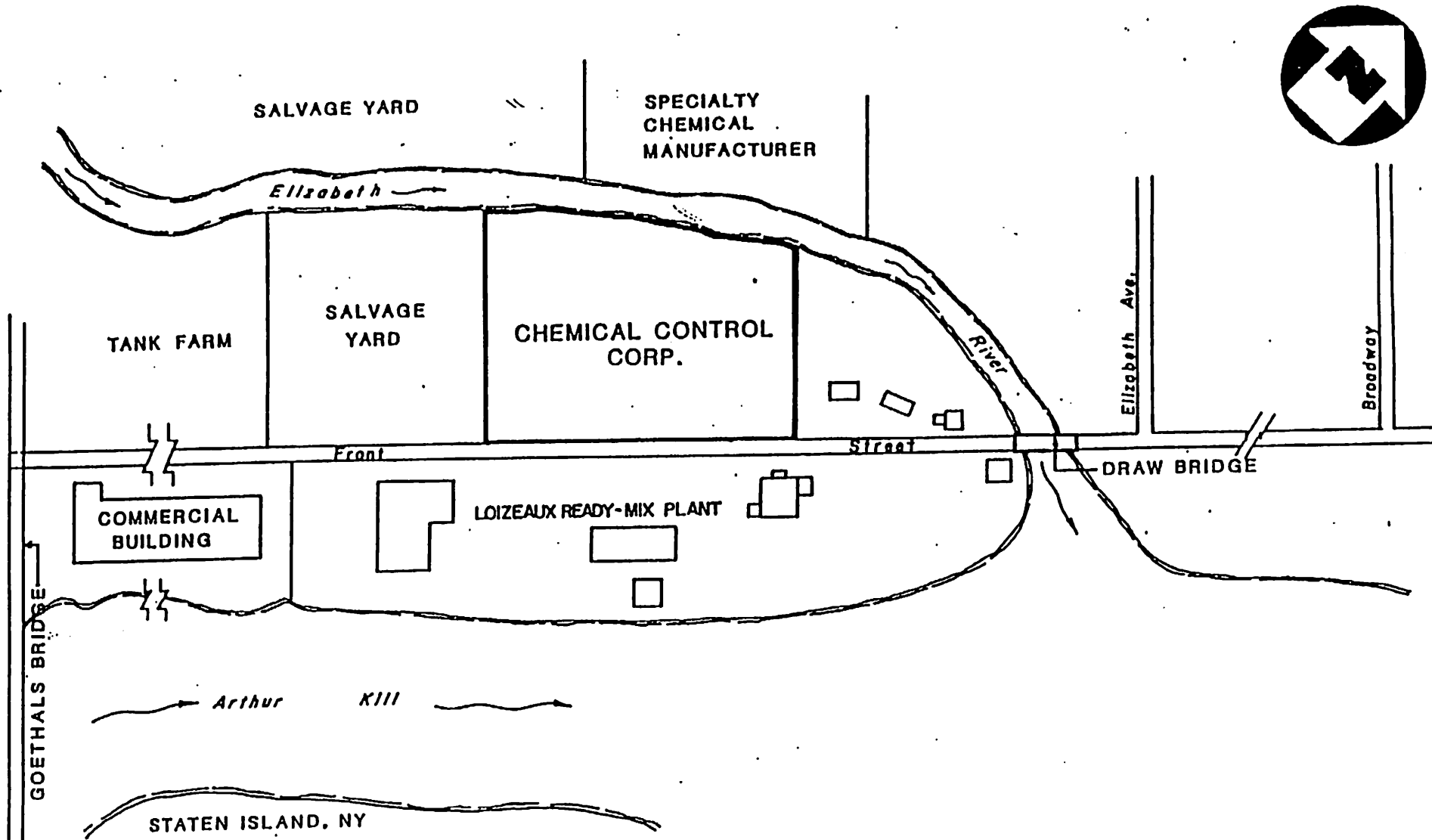


FIGURE 2

GENERAL ARRANGEMENT
CHEMICAL CONTROL CORP. SITE, ELIZABETH, NJ
 NOT TO SCALE

